

WHAT IS CLAIMED IS:

1. A cold plate for a beverage chilling apparatus comprising:

5 a plurality of beverage conducting tubes each having an inlet end, an outlet end, and an intermediate portion constituting a sinuous pattern between said inlet end and said outlet end;

10 a coolant heat exchanging unit comprising an inlet having a first inner diameter, a first Y-coupling connected to the inlet at a first stage, first and second upstream intermediate segments in fluid communication with first Y-coupling, said first and second upstream intermediate segments having an inner diameter less than the inlet inner diameter, a second Y-coupling connected to the first upstream intermediate segment at a second stage and a third Y-coupling connected to the second upstream intermediate segment at the second stage, four heat exchanging lines connected to respective outlets of the second and third Y-couplings and each heat exchanging line having an inner diameter less than the inner diameter of the first and second upstream intermediate segments, the four heat exchanging lines arranged in a heat exchanging relationship with the beverage conducting tubes at their respective intermediate portions, fourth and fifth Y-couplings connecting the four heat exchanging lines with first and second downstream intermediate segments, and a sixth Y-coupling connecting the first and second downstream intermediate segments with an outlet;

20 a metal jacket encasing the beverage conducting tubes and the coolant heat exchanging unit between their respective inlets and outlets.

2. The cold plate of claim 1 further comprising a plurality of metal tie bars coupling the beverage conducting tubes and heat exchanging lines in a heat exchanging relationship.

3. The cold plate of claim 1 wherein the heat exchanging lines are each
5 arranged in a repeating sinusoidal path.

4. The cold plate of Claim 3 wherein each heat exchanging line conforms with an adjacent heat exchanging line in a stacked configuration.

5. The cold plate of Claim 1 wherein the heat exchanging lines are constructed of stainless steel.

10 6. A cold plate for a beverage chilling apparatus comprising:

a plurality of elongate beverage conducting tubes arranged substantially in a sinuous configuration;

a coolant circulating system disposed in heat exchanging relation with the plurality of elongate beverage conducting tubes and comprising an inlet tubular
15 member, first and second upstream intermediate tubular members in fluid communication with the inlet tubular member and connected to the inlet tubular member by a splitter having only one inlet and only two outlets, the two outlets spaced equal distance from the one inlet, first and second pairs of heat exchanging tubular
members in fluid communication with the first and second upstream intermediate
20 tubular members, the first pair of heat exchanging tubular members connected to the first upstream intermediate tubular member by a splitter having only one inlet and only

two outlets, the two outlets spaced equal distance from the one inlet, the second pair of heat exchanging tubular members connected to the second upstream intermediate tubular member by a splitter having only one inlet and only two outlets, the two outlets spaced equal distance from the one inlet, first and second downstream intermediate tubular members, said first downstream intermediate tubular member connected to the first pair of heat exchanging tubular members by a consolidating valve having only two inlets and only one outlet, and the second downstream intermediate tubular member connected to the second pair of heat exchanging tubular members by a consolidating valve having only two inlets and only one outlet, and an outlet tubular member connected to the first and second downstream intermediate tubular members by a consolidating valve having only two inlets and only one outlet; and

a cast aluminum jacket encasing the plurality of beverage conducting tubes and the coolant circulating system.

7. A coolant heat exchanging unit comprising:

an inlet having a first inner diameter, a first Y-coupling connected to the inlet at a first stage, first and second upstream intermediate segments in fluid communication with first Y-coupling, said first and second upstream intermediate segments having an inner diameter less than the inlet inner diameter, a second Y-coupling connected to the first upstream intermediate segment at a second stage and a third Y-coupling connected to the second upstream intermediate segment at the second stage, four heat exchanging lines connected to respective outlets of the second and third Y-couplings and each heat exchanging line having an inner diameter less than the inner diameter of the first and second upstream intermediate segments, fourth and fifth Y-couplings connecting the four heat exchanging lines with first and second

downstream intermediate segments, and a sixth Y-coupling connecting the first and second downstream intermediate segments with an outlet;

8. The heat exchange unit of Claim 7 wherein the heat exchanging lines are each arranged in a repeating sinusoidal path.

5 9. Heat exchange unit of Claim 7 wherein the heat exchanging lines are constructed of stainless steel.

10. A beverage circulating system comprising:

an inlet tubular member, first and second upstream intermediate tubular members in fluid communication with the inlet tubular member and connected to the
10 inlet tubular member by a splitter having only one inlet and only two outlets, the two outlets spaced equal distance from the one inlet, first and second pairs of heat exchanging tubular members in fluid communication with the first and second upstream intermediate tubular members, the first pair of heat exchanging tubular members connected to the first upstream intermediate tubular member by a splitter
15 having only one inlet and only two outlets, the two outlets spaced equal distance from the one inlet, the second pair of heat exchanging tubular members connected to the second upstream intermediate tubular member by a splitter having only one inlet and only two outlets, the two outlets spaced equal distance from the one inlet, first and second downstream intermediate tubular members, said first downstream intermediate tubular member connected to the first pair of heat exchanging tubular members by a
20 consolidating valve having only two inlets and only one outlet, and the second downstream intermediate tubular member connected to the second pair of heat exchanging tubular members by a consolidating valve having only two inlets and only

one outlet, and an outlet tubular member connected to the first and second downstream intermediate tubular members by a consolidating valve having only two inlets and only one outlet.